

## WYOMING LAW ENFORCEMENT RETIREMENT FUND

ACTUARIAL VALUATION REPORT FOR THE YEAR BEGINNING JANUARY 1, 2015



April 27, 2015

Board of Trustees

Wyoming Law Enforcement Retirement Fund
6101 Yellowstone Road
Suite 500
Cheyenne, WY 82002

Dear Board of Trustees:

#### **Subject:** Actuarial Valuation as of January 1, 2015

We are pleased to present the report of the actuarial valuation of the Wyoming Law Enforcement Retirement Fund ("the Fund") for the plan year commencing January 1, 2015. This report describes the current actuarial condition of the Fund, determines the calculated employer contribution rate (the actuarially determined contribution rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of January 1, the first day of the Fund's plan year.

#### Financing objectives and funding policy

The employer and employee contribution rates are specified in the statute. The purpose of this actuarial valuation is to determine whether the statutory contribution is sufficient to meet the obligations of the Fund.

#### Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. The funded ratio as of January 1, 2015 is 93.67%. This funded ratio is based on the assumption that no future cost-of-living increases will be paid annually. In the January 1, 2014 valuation, this funded ratio, based on no future COLAs, was 92.41%. On a market value of assets basis, the funded ratio decreased from 96.53% as of January 1, 2014 to 94.48% as of January 1, 2015.

#### **Benefit provisions**

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2015. W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. Therefore, this valuation does not include any liability for future cost-of-living increases. There were no benefit changes since the prior valuation.

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The benefit provisions are summarized in Appendix B of the report.

#### **Assumptions and methods**

Actuarial assumptions and methods are set by the Board, based upon recommendations made by the plan's actuary. The current assumptions used in the actuarial valuation were adopted by the Board effective February 22, 2013 and were first utilized with the January 1, 2014 valuation report. For a detailed description of the experience related to these assumptions as well as the rational for the changes please see our latest Wyoming Retirement System Actuarial Experience Study Report. Our experience study report is dated February 21, 2013 and it covers the five-year investigation period ending December 31, 2011.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in the report are intended to provide information for rational decision making.

All assumptions and methods are described in Appendix A of the report.

#### Data

Member data for retired, active and inactive members was supplied as of January 1, 2015 by the Fund's staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset and financial information as of January 1, 2015 was prepared by the Wyoming Retirement System and is the responsibility of management. McGee, Hearne & Paiz, LLP provided us the asset and financial information and will opine on Wyoming Retirement System's statements.

#### Plan experience

As part of each valuation, we examine the Fund's experience relative to the assumptions. As experience in a given year deviates from the assumptions, a gain occurs if the liabilities grow slower than the assumption set anticipates and a loss occurs if the liabilities grow faster. This past fiscal year the Fund experienced a total gain on the unfunded actuarial accrued liability of approximately \$5.1 million primarily due to the recognition of past investment gains. The aggregate results of these analyses are disclosed in Tables 4 and 5 under Section III of the report.

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#### **Actuarial certification**

All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. Historical information for years prior to 2010 was prepared by the prior actuarial firm and was not subjected to our actuarial review.

We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2015.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code and ERISA. The undersigned are independent actuaries and consultants. Mark Randall and Leslie Thompson are Enrolled Actuaries, are members of the American Academy of Actuaries, and both meet all the Qualification Standards of the American Academy of Actuaries. Finally, both of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

Mark R. Randall

Mark R. Randall, FCA, EA, MAAA

Chief Executive Officer

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EXECUTIVE SUMMARY

# **Executive Summary**

			January 1, 2015	January 1, 2014
		Item	No COLA	No COLA
	_			
1.	Co	ntributions:		
	a.	Total normal cost	14.54%	14.56%
	b.	Employee contributions	(8.60%)	(8.60%)
	c.	Other expected contributions	0.00%	0.00%
	d.	Net employer normal cost	5.94%	5.96%
	e.	Amortization payment	1.22%	1.39%
	f.	Administrative expenses	0.31%	0.32%
	g.	Required contribution	7.47%	7.67%
	h.	Statutory	(8.60%)	(8.60%)
	i.	Shortfall/(surplus)	(1.13%)	(0.93%)
2.	Fu	nding Elements:		
	a.	Market value of assets (MVA)	\$533,067,313	\$508,523,169
	b.	Actuarial value of assets (AVA)	\$528,542,864	\$486,817,860
	c.	Actuarial accrued liability (AAL)	\$564,241,353	\$526,782,470
	d.	Unfunded/(overfunded) actuarial accrued liability (UAAL)	\$35,698,489	\$39,964,610
3.	Co	ntributions and Ratios:		
	a.	Annual required contribution	\$11,708,248	\$11,812,078
	b.	Actual contributions	N/A	13,496,913
		i. Employer	N/A	13,308,281
		ii. Other	N/A	188,632
	c.	Percentage contributed	N/A	114.26%
	d.	Funded ratio on an actuarial basis (AVA/AAL)	93.67%	92.41%
	e.	Funded ratio on a market basis (MVA/AAL)	94.48%	96.53%
	f.	Projected payroll	\$156,791,728	\$154,071,943

# **SECTION II**

**DISCUSSION** 

#### **Contribution Requirements**

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living adjustments (COLAs).
- W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. The actuarial value funded ratio is 93.67% and the market value funded ratio is 94.48%.
- There were no changes to the benefit provisions reflected in this actuarial valuation.
- There were no changes to the actuarial assumptions or methods.
- The amortization payment is based upon the following assumptions:
  - 30-year open funding period
  - Amortization payment amounts are calculated in such a way that they will increase as a level percentage of payroll
  - Total payroll increases are assumed at 4.25% per year
  - Future growth in the number of active members is not reflected in the annual valuation
- The analysis of the changes in the contribution rates is shown in Table 5 under Section III of the report
- The calculated funding period assuming the current statutory contribution of 8.60% of pay is 12.0 years.

#### **Calculation of Contribution Rates**

The funds available to pay benefits come from two sources, contributions as specified in the statute and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). The Fund receives contributions from two sources, employer contributions and member contributions which are both determined as a percentage of pay. As shown in Table 1 under Section III of the report, the employer contribution rate has three components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)
- The administrative expenses

The NC% is the theoretical amount which would be required to pay the members' benefits if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. The NC% is shown in Table 3 under Section III of the report.

Members are required to make employee contributions and only the excess of the NC% over the member contribution rate is included in the employer contribution rate.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan's assumptions, changes to the plan's actuarial assumptions, and amendments to the benefit provisions.

The UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. This amortization is over a period of 30 years beginning January 1, 2015. The Executive Summary shows the UAAL%, called Amortization Payment, compared to that of last year.

Administrative expenses are the average of the actual expenses for the prior two years, with each year projected at 6.50% to the valuation date.

The calculated rate is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2015. Note, however, that the employer contribution is set at 8.60% of payroll. Therefore, the Actuarially Determined Contribution will be fully contributed. This is detailed in the Executive Summary.

#### **Financial Data and Experience**

As of January 1, 2015, the Fund has a total market value of about \$533 million. Financial information was received from McGee, Hearne & Paiz, LLP.

Table 7 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2014.

During 2014, the net investment return on the market value of assets (MVA) was 4.70%, as reported by NEPC, LLC, as shown in Table 10 under Section III of the report.

In determining the contribution rates and funded status of the Fund, an actuarial value of assets (AVA) is used rather than the market value of assets. The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is \$529 million. The AVA is 99.15% of the MVA as of December 31, 2014, compared to 95.73% last year. The difference between the AVA and the MVA is the deferred gains and losses. As of January 1, 2014, the total deferred gain was \$21.7 million. As of January 1, 2015, the total deferred gain was \$4.5 million.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2014, this return was 8.64%. Because this is the greater than the prior assumed 7.75% investment return, an actuarial gain occurred, decreasing the unfunded actuarial accrued liabilities of the Fund by \$5.0 million.

#### **Member Data**

Member data as of January 1, 2015 was supplied electronically by the Fund's staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 15 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 16 through 28 show summaries of certain historical data and include membership statistics.

The total payroll shown on the statistical tables is the amount that was supplied by the Fund, annualized, if necessary. For the cost calculations, the pay amounts were adjusted in accordance with the actuarial assumptions to reflect one year's salary increase.

Total active member payroll increased 1.77%, compared with a 2.34% decrease the prior year.

Of the 2,755 active participants, 302 are eligible or will become eligible for normal retirement in 2015, and 270 are eligible or will become eligible for early retirement in 2015.

If the payroll does not grow at the assumed 4.25% per year average, then the current amortization payments may be understated and the funding position of the Fund will not strengthen as assumed over time. Table 5 under Section III of the report shows, for the past year, payroll for the plan increased less than expected, so the effect is an increase in the calculated contribution rate of 0.03% of payroll.

One reason payroll increased less than expected is that the salary, for continuing active participants, increased less than expected. This represented a gain to the Plan, as shown in Table 4 under Section III of the report.

#### **Benefit Provisions**

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. A brief summary from W.S. 9-3-432 is as follows:

- Normal Retirement Eligibility
  - Age 60 with at least four years of service as a law enforcement officer or any age with at least twenty years of service as a law enforcement officer.
- Normal Retirement Benefit
  - 2.50% of highest average five-year salary not to exceed 75.0% of highest average five-year salary.
- Normal Form of Payment
  - Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
- Employee Contributions are required
  - 8.60% of pay.
- Post-retirement Cost-of-Living Adjustments (COLAs)
  - W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.

There have been no changes to plan provisions since the prior valuation.



#### **Actuarial Methods and Assumptions**

Appendix A of the report includes a summary of the actuarial assumptions and methods used in this valuation. A few highlights are listed as follows:

- Costs are determined using the Entry Age Normal actuarial cost method, calculated as a level percentage of payroll.
- The unfunded actuarial accrued liability is amortized over an open 30 year period as a level percent of payroll.
- The assumed annual investment return rate is 7.75%, with assumed inflation of 3.25%.
- Payroll is assumed to increase at 4.25% per year.
- Inactive vested participants are assumed to retire at age 60 or the valuation date if over age
   60. Those with over 20 years of service are assumed to retire immediately.
- No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.

The average future lifetime for current pensioners is 23.0 years.

There have been no changes in actuarial assumptions or methods since the prior valuation.

### **GASB** and Funding Progress

Governmental Accounting Standards Board Statement Number 67 (GASB 67) contains certain accounting requirements for the Fund. Schedules, notes and required supplementary information are provided under separate cover.

# **SECTION III**

SUPPORTING EXHIBITS

# Calculation of Annual Required Contribution Rate (Assumes No Future Cost-Of-Living Increases)

	Item	January 1, 2015	January 1, 2014
1.	Projected valuation payroll	\$156,791,728	\$154,071,943
2.	Present value of future pay	\$1,141,467,446	\$ 1,126,844,925
3.	Employer normal cost rate	5.94%	5.96%
4.	Actuarial accrued liability for active members  a. Present value of future benefits for active members	\$439,090,719	\$425,470,499
	<ul><li>b. Less: present value of future employer normal costs</li><li>c. Less: present value of future employee contributions</li></ul>	(63,083,154) (98,166,203)	(62,246,580) (96,908,664)
	d. Actuarial accrued liability	\$277,841,362	\$266,315,256
5.	Total actuarial accrued liability for:  a. Retirees and beneficiaries  b. Disabled members	\$232,976,789 36,215,321	\$212,989,738 32,000,568
	Duty Non-duty	26,741,028 9,474,293	24,874,207 7,126,361
	<ul><li>c. Inactive members</li><li>d. Active members (Item 4d)</li></ul>	17,207,881 277,841,362	15,476,908 266,315,256
	e. Total	\$564,241,353	\$526,782,470
6.	Actuarial value of assets (Table 9)	\$528,542,864	\$486,817,860
7.	Unfunded actuarial accrued liability (UAAL) (Item 5e - Item 6)	\$35,698,489	\$39,964,610
8.	Funding period	30 years	30 years
9.	Assumed payroll growth rate	4.25%	4.25%
10.	Employer Contribution requirement		
	a. UAAL amortization payment as % of pay	1.22%	1.39%
	b. Employer normal cost	5.94%	5.96%
	c. Administrative expense	0.31%	0.32%
	d. Contribution requirement $(a + b + c)$	7.47%	7.67%

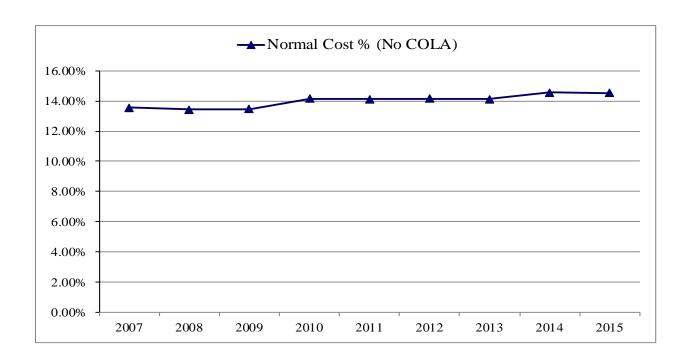
Cost Breakdown

	Present Value of Future Normal Costs	Actuarial Accrued Liabilities	Total Present Value of Benefits
Item	(1)	(2)	(3) = (1) + (2)
Age and service allowances based on total service and disability benefits likely to be rendered by present active members	\$123,019,453	\$274,106,019	\$397,125,472
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	5,746,559	3,347,486	9,094,045
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	32,483,345	387,857	32,871,202
Benefits likely to be paid to vested inactive members	0	14,194,562	14,194,562
Benefits to be paid to members due refunds	0	3,013,319	3,013,319
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	0	269,192,110	269,192,110
Total	\$161,249,357	\$564,241,353	\$725,490,710
Actuarial Value of Assets	0	528,542,864	528,542,864
Liabilities to be covered by future contributions	\$161,249,357	\$35,698,489	\$196,947,846



## **History of Total Normal Cost**

Fiscal Year Ending December 31	Normal Cost as Percent of Payroll	
2007	13.56%	
2008	13.42%	
2009	13.46%	
2010	14.14%	
2011	14.13%	
2012	14.14%	
2013	14.12%	
2014	14.56%	
2015	14.54%	



## **Calculation of Total Actuarial Gain/(Loss)**

Item	<b>January 1, 2015</b>
1. Derivation of Experience Gain/(Loss)	
a. Unfunded actuarial accrued liability (UAAL) - previous valuation	\$39,964,610
b. Normal cost (NC) for fiscal year ending December 31, 2014	22,432,708
c. Actual administrative expenses for fiscal year ending December 31, 2014	414,331
d. Actuarially determined contribution for fiscal year ending December 31, 2014	25,062,265
e. Interest accrual:	
(i) For whole year on (a)	3,097,257
(ii) For half year on (b) $+$ (c) $-$ (d)	(85,840)
(iii) Total interest: $(e)(i) + (e)(ii)$	3,011,417
f. Change in UAAL due to plan changes	-
g. Change in UAAL due to assumption change	-
h. Expected UAAL current year: (a) + (b) + (c) - (d) + (e)(iii) + (f) + (g)	40,760,801
i. Actual UAAL current year	35,698,489
j. Experience gain/(loss): (h) - (i)	5,062,312
k. Experience gain/(loss) as a % of actuarial accrued liability	0.90%
2. Approximate Portion of Gain/(Loss) Due to Investments	
(at Actuarial Value)	\$4,956,142
2. A managing to Position of Coin/(Loss) Due to Contributions	
3. Approximate Portion of Gain/(Loss) Due to Contributions	¢1 01 <i>6 546</i>
higher or lower than expected	\$1,816,546
4. Approximate Portion of Gain/(Loss) Due to Liabilities: (1)(j) - (2) - (3)	(\$1,710,375)
a. Age & service retirements	(887,011)
b. Non-duty disability retirements	(1,271,666)
c. Duty disability retirements	777,369
d. Death-in-service	(168,619)
e. Withdrawal from employment	1,955
f. Rehires	(422,578)
g. Pay increases	3,290,865
h. Death After Retirement	(767,505)
i. Other	(2,263,186)
j. Other as a % of actuarial accrued liability	-0.40%

## **Change in Calculated Contribution Rate Since the Prior Valuation**

Item	<b>January 1, 2015</b>
1. Calculated contribution rate as of January 1, 2014	7.67%
2. Change in contribution rate during year	
a. Change in employer normal cost	-0.02%
b. Assumption changes	0.00%
c. Recognition of prior asset losses (gains)	-0.19%
d. Actuarial (gain) loss from current year asset performance	0.10%
e. Actuarial (gain) loss from liability sources and administrative expenses	-0.03%
f. Difference between contributions made and required contributions	-0.06%
g. Effect of payroll growing (faster)/slower than assumption	0.03%
h. Open amortization period reset to 30 years	-0.03%
i. Other changes	0.00%
j. Total change	-0.20%
3. Calculated contribution rate as of January 1, 2015	7.47%



## **Statement of Plan Net Assets**

Assets at Market Value						
Item	FYE 2014	FYE 2013				
1. Cash and Cash Equivalents (Operating Cash)	\$31,903,659	\$16,765,984				
2. Receivables						
a. Insurance premium tax	\$0	\$0				
b. Buy backs	-	-				
c. Employer contributions	\$1,206,228	\$1,090,770				
d. Employee contributions	1,206,232	1,090,665				
e. Securities sold	264,760	2,209,663				
f. Accrued interest and dividends	1,385,126	1,603,395				
g. Currency contract receivable	78,370,715	66,697,640				
h. Other	12,919	13,881				
i. Rebate and fee income receivable	0	0				
j. Total receivables	\$82,445,980	\$72,706,014				
3. Investments, at fair value	\$546,087,899	\$550,221,988				
4. Liabilities						
a. Benefits and refunds payable	(\$31,033)	(\$53,234)				
b. Securities purchased	(4,843,369)	(6,754,158)				
c. Administrative and consulting fees payable	(929,697)	(858,131)				
d. Currency contract payable	(76,613,665)	(67,037,078)				
e. Securities lending collateral	(44,952,461)	(56,468,216)				
f. Total liabilities	(\$127,370,225)	(\$131,170,817)				
5. Total Market Value of Assets Available for Benefits	\$533,067,313	\$508,523,169				



## **Reconciliation of Plan Net Assets**

	Assets at Market Value					
	Item	FYE 2014	FYE 2013			
A.	Market Value of Assets at Beginning of Year	\$508,523,169	\$448,163,216			
В.	Contribution Income:					
	1. Contributions					
	a. Employee	\$13,314,132	\$13,043,663			
	b. Employer	13,308,281	13,008,950			
	c. Other	803,152	549,636			
	d. Total	\$27,425,565	\$26,602,249			
	2. Investment Income					
	a. Interest, dividends, and other income	\$12,827,661	\$11,877,124			
	b. Net appreciation	15,127,314	50,661,888			
	c. Investment expenses	(3,370,759)	(2,876,616)			
	d. Net investment income	\$24,584,216	\$59,662,396			
	3. Securities Lending					
	a. Gross income	\$316,570	\$333,465			
	b. Deductions	(47,434)	(49,997)			
	c. Net investment income	\$269,136	\$283,468			
	4. Benefits and Refunds					
	a. Refunds	(\$4,110,605)	(\$4,426,242)			
	b. Regular monthly benefits	(23,209,837)	(21,291,741)			
	c. Total	(\$27,320,442)	(\$25,717,983)			
	5. Administrative and Miscellaneous Expenses	(\$414,331)	(\$470,177)			
C.	Market Value of Assets at End of Year	\$533,067,313	\$508,523,169			



## **Progress of Fund Through December 31, 2014**

Plan Year Ending December 31	Employer Contributions*	Employee Contributions*	Administrative Expenses	Net Investment Income**	Benefit Payments	Transfers	Actuarial Value of Assets
Total	\$166,832,354	\$133,155,285	(\$2,712,367)	\$180,513,140	(\$196,540,259)	\$8,655,176	
2003	\$7,229,011	\$8,646,962	(\$67,842)	\$9,479,413	(\$6,475,594)	-	\$204,892,219
2004	12,902,452	8,415,620	(83,082)	12,318,566	(7,747,280)	-	230,698,495
2005	11,155,211	8,185,299	(138,060)	16,938,900	(10,532,309)	\$8,655,176	264,962,712
2006	34,228,475	9,114,022	(101,237)	25,935,590	(11,170,034)	-	322,969,528
2007	10,591,387	10,072,138	(113,629)	34,419,422	(13,215,795)	-	364,723,051
2008	11,861,638	11,267,854	(158,229)	(46,711,706)	(15,036,756)	-	325,945,852
2009	11,779,557	11,867,348	(184,662)	4,176,581	(16,785,935)	-	389,358,007
2010	13,166,633	12,811,136	(219,040)	13,106,593	(18,656,300)	-	409,567,029
2011	13,497,836	12,838,756	(345,446)	7,312,027	(20,667,243)	-	422,202,959
2012	13,364,655	12,963,835	(416,632)	12,335,269	(23,214,588)	-	437,235,498
2013	13,558,586	13,043,663	(470,177)	49,168,273	(25,717,983)	-	486,817,860
2014	13,496,913	13,928,652	(414,331)	42,034,212	(27,320,442)	-	528,542,864

<sup>\*</sup> Employer contributions include other funding sources and employee contributions may include member redeposits and member service purchase contributions

<sup>\*\*</sup> Net of investment expenses

## **Development of Actuarial Value of Assets**

Item	FYE 2014	FYE 2013
1. Actuarial value of assets, beginning of year (before corridor)	\$486,817,860	\$437,235,498
2. Market value, end of year	\$533,067,313	\$508,523,169
3. Market value, beginning of year	\$508,523,169	\$448,163,216
4. Non-investment/administrative net cash flow:		
a. Employee contributions	\$13,314,132	\$13,043,663
b. Employer contributions	13,308,281	13,008,950
c. Other contributions	803,152	549,636
d. Refund of employee accounts	(4,110,605)	(4,426,242)
e. Retirement benefits	(23,209,837)	(21,291,741)
f. Administrative expenses	(414,331)	(470,177)
g. Total net cash flow: [sum of (4a) through (4f)]	(\$309,208)	\$414,089
5. Investments and securities lending:		
a. Interest and dividends on investments	\$12,827,661	\$11,877,124
b. Gross income from securities lending	316,570	333,465
c. Fees and expenses	(3,418,193)	(2,926,613)
d. Total net income: [sum of (5a) through (5c)]	\$9,726,038	\$9,283,976
6. Investment income:		
a. Actual market return: (2) - (3) - (4g) - (5d)	\$15,127,314	\$50,661,888
b. Assumed rate of return**	7.75%	8.00%
c. Assumed amount of return	29,672,749	26,585,326
d. Amount subject to phase-in: (6a) - (6c)	(\$14,545,435)	\$24,076,562
7. Phase-in recognition of investment income:		
a. Current year: 0.20 * (6d)	(\$2,909,087)	\$4,815,312
b. First prior year	4,815,312	4,481,418
c. Second prior year	4,481,418	(7,247,974)
d. Third prior year	(7,247,974)	3,495,756
e. Fourth prior year	3,495,756	7,754,459
f. Total recognition	\$2,635,425	\$13,298,971
8. Actuarial value of assets, end of year		
a. Preliminary actuarial value of assets, end of year:		
(1) + (4g) + (5d) + (6c) + (7f)	\$528,542,864	\$486,817,860
b. Upper corridor limit: 120% * (2)	639,680,776	610,227,802
c. Lower corridor limit: 80% * (2)	426,453,850	406,818,535
d. Actuarial value of assets, end of year	\$528,542,864	\$486,817,860
9. Difference between market and actuarial value of assets	\$4,524,449	\$21,705,309
10. Actuarial rate of return	8.64%	11.24%
11. Market rate of return*	4.70%	13.53%
12. Ratio of actuarial value to market value of assets	99.15%	95.73%

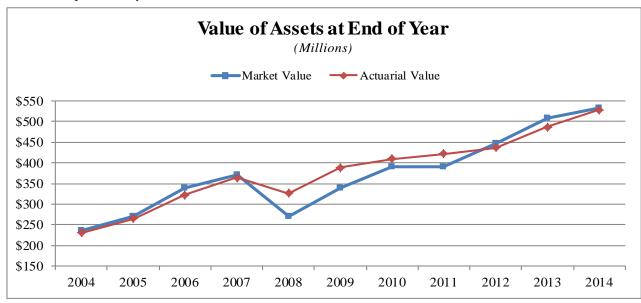
<sup>\*</sup> Current year market rate of return is based on unaudited data and is supplied by NEPC, LLC.

<sup>\*\*</sup> The interest accrual of 8.00% is used for the period January 1, 2013 through December 31, 2013. Effective January 1, 2014, the assumed interest rate is 7.75%.

### **History of Investment Returns**

Plan Year	Market Value	Actuarial Value
(1)	(2)	(3)
2004	11.54%	5.82%
2005	8.22%	7.08%
2006	12.63%	9.23%
2007	7.44%	10.54%
2008	-29.63%	-12.67%
2009	23.72%	17.23%
2010	13.80%	3.34%
2011	-0.90%	1.77%
2012	14.05%	2.91%
2013	13.53%	11.24%
2014	4.70%	8.64%
Average returns:		
Last five years:	8.86%	5.52%
Last ten years:	5.71%	5.64%

The market rates above were provided by NEPC, LLC. The actuarial rates above are based on the financial information provided by McGee, Hearne & Paiz, LLP.





## **Solvency Test**

Valuation	Total Active Member	Inactive and Pensioner	Active Accrued	Actuarial	Percei	ntage of Lia	abilities
Date	Contributions	Liability	Liability	Value of	-	ered by As	
January 1	(1)	(2)	(3)	Assets	(1)	(2)	(3)
2005	\$61,842,876	\$87,958,000	\$110,225,000	\$230,698,495	100%	100%	73.4%
2006	66,827,791	109,836,100	119,969,000	264,962,712	100%	100%	73.6%
2007	72,004,612	130,672,200	128,806,000	322,969,528	100%	100%	93.4%
2008	74,889,713	163,621,400	141,901,000	364,723,051	100%	100%	88.9%
2009	82,306,146	173,849,000	134,790,000	325,945,852	100%	100%	51.8%
2010	92,241,086	166,797,234	121,992,468	389,358,007	100%	100%	100.0%
2011	100,333,051	186,200,382	123,626,373	409,567,029	100%	100%	99.5%
2012	106,871,965	210,366,572	123,266,327	422,202,959	100%	100%	85.2%
2013	116,002,787	229,727,100	127,814,770	437,235,498	100%	100%	71.6%
2014	121,915,804	260,467,214	144,399,452	486,817,860	100%	100%	72.3%
2015	128,198,774	286,399,991	149,642,588	528,542,864	100%	100%	76.1%

Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

## **Schedule of Funding Progress**

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Valuation	Actuarial Accrued		Unfunded AAL	Funded		UAAL as a Percentage of Covered
Date	Actuariai Value of	Accrued Liability	(UAAL)	Ratio	Covered	Payroll
January 1	Assets	(AAL)	[(3) - (2)]	[(2)/(3)]	Payroll	[(4)/(6)]
2003	\$186,080,269	\$206,395,100	\$20,314,831	90.16%	\$79,217,700	25.64%
2004	204,892,219	236,441,300	31,549,081	86.66%	84,242,600	37.45%
2005	230,698,495	260,025,800	29,327,305	88.72%	89,351,600	32.82%
2006	264,962,712	296,633,400	31,670,688	89.32%	98,070,700	32.29%
2007	322,969,528	331,483,200	8,513,672	97.43%	108,350,000	7.86%
2008	364,723,051	380,413,100	15,690,049	95.88%	119,165,000	13.17%
2009	325,945,852	390,945,700	64,999,848	83.37%	132,701,500	48.98%
2010	389,358,007	381,030,788	(8,327,219)	102.19%	149,481,383	-5.57%
2011	409,567,029	410,159,806	592,777	99.86%	154,652,284	0.38%
2012	422,202,959	440,504,864	18,301,905	95.85%	155,481,933	11.77%
2013	437,235,498	473,544,657	36,309,158	92.33%	157,764,488	23.01%
2014	486,817,860	526,782,470	39,964,610	92.41%	154,071,943	25.94%
2015	528,542,864	564,241,353	35,698,489	93.67%	156,791,728	22.77%

Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

## Schedule of Contributions from the Employer(s) and Other Contributing Entities

(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Year Ending	Actuarially l Contri		Employer Co	ontributions*	Percentage of Actuarially Determined Contributions Contributed
December 31	% of Payroll	Amount	% of Payroll	Amount	[(5)/(3)]
2004	7.95%	\$6,693,300	15.32%	\$12,902,452	192.77%
2005	8.81%	7,873,900	12.48%	11,155,211	141.67%
2006	7.28%	7,138,000	34.90%	34,228,475	479.52%
2007	7.21%	7,810,100	9.78%	10,591,387	135.61%
2008	7.62%	9,084,200	9.95%	11,861,638	130.57%
2009	8.60%	11,413,400	8.88%	11,779,557	103.21%
2010	5.37%	8,029,651	8.81%	13,166,633	163.98%
2011	5.69%	8,806,599	8.73%	13,497,836	153.27%
2012	6.37%	9,899,466	8.60%	13,364,655	135.00%
2013	7.01%	11,071,525	8.59%	13,558,586	122.46%
2014	7.67%	11,812,078	8.76%	13,496,913	114.26%
2015	7.47%	11,708,248	-	-	-

Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

<sup>\*</sup>Includes other funding sources but excludes member redeposits and member service purchase contributions.

## **Reconciliation of Participant Data**

	Active Participants	Vested Former Participants	Retired Participants	Disableds	Beneficiaries	Participants Due Refunds	Total
Number as of January 1, 2014	2,808	247	710	111	96	665	4,637
New participants	318	-	-	-	-	49	367
Vested Terminations	(78)	78	-	-	-	-	-
Retirements	(61)	(9)	70	-	-	-	-
Disability	(12)	(4)	-	16	-	-	-
Deceased with Beneficiary	(2)	(1)	(9)	-	12	-	-
Deceased without Beneficiary	(1)	-	(4)	(1)	(1)	-	(7)
Due refunds	(103)	-	-	-	-	103	-
Lump sum payoffs	(139)	(24)	-	-	-	(70)	(233)
Rehires/Return to Active	25	(12)	(1)	-	-	(12)	-
Certain Period Expired	-	-	-	-	(1)	-	(1)
Reclassifications	-	-	(1)	-	<del>-</del>	-	(1)
Data Corrections	-	2	-	-	4	-	6
Number as of January 1, 2015	2,755	277	765	126	110	735	4,768

## **Demographic Statistics**

	Janua		
	2015	2014	Change
Active Participants			
Number	2,755	2,808	-1.9%
Vested	1,828	1,854	
Not vested	927	954	
Average age (years)	39.44	39.40	0.1%
Average service (years)	8.05	7.85	2.5%
Average entry age (years)	31.39	31.55	-0.5%
Total payroll*	\$156,791,728	\$154,071,943	1.8%
Average payroll*	\$56,912	\$54,869	3.7%
Total employee contributions with interest	\$128,198,774	\$121,915,804	5.2%
Average employee contributions with interest	\$46,533	\$43,417	7.2%
Vested Former Participants			
Number	277	247	12.1%
Average age (years)	43.60	43.96	-0.8%
Total employee contributions with interest	\$11,955,415	\$10,415,006	14.8%
Average employee contributions with interest	\$43,160	\$42,166	2.4%
Service Retirees			
Number	765	710	7.7%
Average age (years)	62.47	61.98	0.8%
Total annual benefits	\$19,150,884	\$17,582,978	8.9%
Average annual benefit	\$25,034	\$24,765	1.1%
Disability Retirees			
Number	126	111	13.5%
Average age (years)	55.64	55.81	-0.3%
Total annual benefits	\$3,581,060	\$3,106,411	15.3%
Average annual benefit	\$28,421	\$27,986	1.6%
Beneficiaries			
Number	110	96	14.6%
Average age (years)	60.60	60.20	0.7%
Total annual benefits	\$1,560,456	\$1,255,704	24.3%
Average annual benefit	\$14,186	\$13,080	8.5%
Participants Due Refunds			
Number	735	665	10.5%
Total Refunds Due	\$3,013,319	\$2,634,644	14.4%

<sup>\*</sup> Projected payroll for the upcoming valuation year



### Distribution of Male Active Members by Age and by Years of Service

Average Age = 39.4 Average Service = 8.3

Ag	e			Whole Y	Zears of Servi	ice at Valuati	on Date		
Last Bir	rthday	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals
Less than 20	Count	3	-	-	-	-	-	-	3
	Avg. Salary	*	-	-	-	-	-	-	*
20-24	Count	108	2	-	-	-	-	-	110
	Avg. Salary	\$43,293	*	-	-	-	-	-	\$43,278
25-29	Count	261	94	-	-	-	-	-	355
	Avg. Salary	48,942	\$56,338	-	-	-	-	-	50,901
30-34	Count	157	170	37	-	-	-	-	364
	Avg. Salary	47,744	61,818	\$66,992	-	-	-	-	56,273
35-39	Count	88	117	92	15	-	-	-	312
	Avg. Salary	46,667	61,817	65,031	\$70,724	-	-	-	58,920
40-44	Count	65	74	80	55	7	-	-	281
	Avg. Salary	47,382	60,620	65,700	71,297	\$76,966	-	-	61,501
45-49	Count	50	53	57	51	33	8	-	252
	Avg. Salary	47,937	60,264	66,760	74,533	79,334	\$81,520	-	65,347
50-54	Count	34	48	33	29	24	12	1	181
	Avg. Salary	49,707	57,827	63,172	67,093	66,965	83,246	*	61,773
55-59	Count	19	28	22	18	13	14	14	128
	Avg. Salary	49,245	60,385	62,488	63,419	70,569	75,405	\$87,008	65,109
60-64	Count	4	12	9	5	7	9	9	55
	Avg. Salary	54,200	55,385	55,334	59,478	63,096	61,742	72,826	60,538
65-69	Count	-	3	3	3	2	2	2	15
	Avg. Salary	-	*	*	*	*	*	*	61,308
70 & Over	Count	-	-	-	2	-	1	1	4
	Avg. Salary	-			*		*	*	73,915
Totals	Count	789	601	333	178	86	46	27	2,060
	Avg. Salary	\$47,413	\$59,988	\$65,022	\$70,308	\$72,763	\$74,682	\$82,289	\$58,031

Average Salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

### Distribution of Female Active Members by Age and by Years of Service

Average Age = 39.4 Average Service = 7.3

Ag	e	Whole Years of Service at Valuation Date									
Last Birthday		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals		
Less than 20	Count	3	-	-	-	-	-	-	3		
	Avg. Salary	*	_	-	-	-	-	-	*		
20-24	Count	50	-	-	-	-	-	-	50		
	Avg. Salary	\$38,513	-	-	-	-	-	-	\$38,513		
25-29	Count	83	25	-	-	-	-	-	108		
	Avg. Salary	44,996	\$58,050	-	-	-	-	-	48,018		
30-34	Count	43	53	9	-	-	-	-	105		
	Avg. Salary	41,929	55,311	\$58,296	-	-	-	-	50,087		
35-39	Count	42	37	29	4	-	-	-	112		
	Avg. Salary	47,329	52,260	61,247	\$59,981	-	-	-	53,013		
40-44	Count	34	34	24	17	-	-	-	109		
	Avg. Salary	46,790	57,225	60,244	61,826	-	-	_	55,352		
45-49	Count	20	24	16	11	2	1	-	74		
	Avg. Salary	44,243	53,750	59,320	70,040	*	*	_	55,395		
50-54	Count	21	9	14	10	6	3	-	63		
	Avg. Salary	45,790	53,904	63,276	60,484	\$61,909	*	-	56,302		
55-59	Count	4	13	11	15	2	-	1	46		
	Avg. Salary	40,736	53,040	52,381	62,396	*	-	*	56,220		
60-64	Count	3	2	3	5	6	2	1	22		
	Avg. Salary	*	*	*	60,555	64,356	*	*	59,015		
65-69	Count	-	-	1	1	-	-	1	3		
	Avg. Salary	-	-	*	*	-	-	*	*		
70 & Over	Count	_		-		-	_	-	-		
	Avg. Salary								_		
Totals	Count	303	197	107	63	16	6	3	695		
	Avg. Salary	\$43,800	\$55,105	\$59,554	\$62,581	\$66,212	\$67,859	*	\$51,961		

Average Salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

### Distribution of Total Active Members by Age and by Years of Service

Average Age = 39.4 Average Service = 8.1

Ag	e			Whole '	Years of Serv	vice at Valuat	ion Date		
Last Bir	rthday	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals
Less than 20	Count	6	-	-	-	-	-	-	6
	Avg. Salary	\$17,925	-	-	-	-	-	-	\$17,925
20-24	Count	158	2	-	-	-	-	-	160
	Avg. Salary	41,780	*	-	-	-	_	-	41,789
25-29	Count	344	119	-	-	-	-	-	463
	Avg. Salary	47,990	\$56,698	-	-	_	_	-	50,228
30-34	Count	200	223	46	-	-	-	-	469
	Avg. Salary	46,494	60,271	\$65,291	-	-	-	-	54,888
35-39	Count	130	154	121	19	-	-	-	424
	Avg. Salary	46,881	59,521	64,124	\$68,463	-	-	-	57,360
40-44	Count	99	108	104	72	7	-	-	390
	Avg. Salary	47,179	59,551	64,441	69,061	\$76,966	-	-	59,783
45-49	Count	70	77	73	62	35	9	-	326
	Avg. Salary	46,882	58,234	65,129	73,735	79,133	\$78,371	-	63,088
50-54	Count	55	57	47	39	30	15	1	244
	Avg. Salary	48,212	57,208	63,203	65,399	65,954	82,471	*	60,361
55-59	Count	23	41	33	33	15	14	15	174
	Avg. Salary	47,766	58,056	59,119	62,954	71,172	75,405	\$85,962	62,759
60-64	Count	7	14	12	10	13	11	10	77
	Avg. Salary	52,411	56,686	55,692	60,017	63,677	61,048	69,964	60,103
65-69	Count	-	3	4	4	2	2	3	18
	Avg. Salary	-	*	54,045	57,200	*	*	*	60,589
70 & Over	Count	-	-	-	2	-	1	1	4
	Avg. Salary	-	-	-	*	-	*	*	73,915
Totals	Count	1,092	798	440	241	102	52	30	2,755
	Avg. Salary	\$46,410	\$58,782	\$63,692	\$68,288	\$71,736	\$73,895	\$80,886	\$56,500

Average Salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

## Distribution of Male Deferred Members by Age and by Years of Service

Average Age = 43.3 Average Service = 7.9

Age			Whole Ye	ars of Serv	ice at Valu	ation Date		
Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals
Less than 20	-	-	-	-	-	-	-	-
20-24	-	1	-	-	-	-	-	1
25-29	-	3	5	-	-	-	-	8
30-34	-	11	20	3	-	-	-	34
35-39	-	9	20	7	-	-	-	36
40-44	-	1	21	13	1	-	-	36
45-49	-	3	18	8	-	1	-	30
50-54	-	2	6	3	2	-	-	13
55-59	-	1	13	4	1	-	-	19
60-64	1	2	5	2	1	-	-	11
65-69	-	1	-	-	-	-	-	1
70 & Over	-	-	-	-	-	-	-	-
Totals	1	34	108	40	5	1	-	189

# Distribution of Female Deferred Members by Age and by Years of Service

Average Age = 44.3 Average Service = 8.1

Age		Whole Years of Service at Valuation Date									
Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals			
Less than 20	-	-	-	-	-	-	-	-			
20-24	-	-	-	-	-	-	-	-			
25-29	-	1	4	-	-	-	-	5			
30-34	-	4	9	-	-	-	-	13			
35-39	-	2	10	1	-	-	-	13			
40-44	-	1	9	4	-	-	-	14			
45-49	-	2	6	7	1	-	-	16			
50-54	-	2	8	4	-	-	-	14			
55-59	-	-	7	-	2	2	-	11			
60-64	-	-	2	-	-	-	-	2			
65-69	-	-	-	-	-	-	-	-			
70 & Over	-	-	-	-	-	-	-	-			
Totals	-	12	55	16	3	2	-	88			

# Distribution of Total Deferred Members by Age and by Years of Service

Average Age = 43.6 Ave

Average Service = 8.0

Age			Whole Ye	ars of Serv	ice at Valu	ation Date	,	
Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals
Less than 20	-	-	-	-	-	-	-	-
20-24	-	1	-	-	-	-	-	1
25-29	-	4	9	-	-	-	-	13
30-34	-	15	29	3	-	-	-	47
35-39	-	11	30	8	-	-	-	49
40-44	-	2	30	17	1	-	-	50
45-49	-	5	24	15	1	1	-	46
50-54	-	4	14	7	2	-	-	27
55-59	-	1	20	4	3	2	-	30
60-64	1	2	7	2	1	-	-	13
65-69	-	1	-	-	-	-	-	1
70 & Over	-	-	-	-	-	-	-	-
Totals	1	46	163	56	8	3	-	277

# **Schedule of Pension Recipients Added to and Removed from Rolls**

							Percent	
Fiscal Year			Removed from Rolls			Total		Average
Ending December 31	C4	Annual Pension	Commit	Annual Pension	C4	Annual Pension	Annual Pension Benefits	Annual Pension Benefit
31	Count	Benefits	Count	Benefits	Count	Benefits	Delients	Denent
2008	72	\$1,651,841	11	(\$9,251)	610	\$13,605,759	13.91%	\$22,305
2009	55	1,154,341	9	(65,125)	656	14,694,975	8.01%	22,401
2010	75	1,881,618	12	(109,159)	719	16,467,434	12.06%	22,903
2011	93	2,330,905	7	(101,024)	805	18,697,315	13.54%	23,226
2012	54	1,418,567	7	(62,989)	852	20,052,893	7.25%	23,536
2013	77	2,048,141	12	(155,942)	917	21,945,092	9.44%	23,931
2014	98	2,598,158	14	(250,849)	1,001	24,292,401	10.70%	24,268

<sup>\*</sup> Includes cost-of-living increases

# **Retired and Disabled Members by Option Code**

		Count		M	onthly Bene	fit
	Male	Female	Total	Male	Female	Total
Option Code*						
1	125	62	187	\$289,183	\$100,616	\$389,798
2	287	39	326	655,669	72,194	727,863
2P	112	23	135	233,169	44,953	278,121
3	22	6	28	51,441	16,892	68,333
3P	21	7	28	50,608	10,205	60,813
4	18	7	25	39,786	13,497	53,282
5	23	13	36	36,815	21,935	58,750
Other**	122	4	126	250,478	6,890	257,367
Total	730	161	891	\$1,607,148	\$287,181	\$1,894,329
Beneficiaries	9	101	110	\$7,426	\$122,612	\$130,038
Grand Total	739	262	1,001	\$1,614,574	\$409,793	\$2,024,367

<sup>\*</sup>See optional forms of payment in Appendix B.
\*\*66.67% joint and survivor option for grandfathered employees.

# Pensioners by Monthly Benefit and Option Code

Males				C	ption (	Code			
Benefit Amount	1	2	2P	3	3P	4	5	Other	Total
<b>Under \$200</b>	1	1	-	-	-	-	2	-	4
\$200-\$399	6	5	7	-	-	3	5	-	26
\$400-\$599	2	12	6	2	-	-	4	1	27
\$600-\$799	10	7	6	-	-	1	3	2	29
\$800-\$999	1	5	3	1	-	1	3	3	17
\$1,000-\$1,499	7	26	12	2	4	-	2	12	65
\$1,500-\$1,999	20	48	15	3	3	1	1	41	132
\$2,000-\$2,499	27	74	23	1	7	4	5	35	176
\$2,500 & over	51	109	40	13	7	8	7	28	263
Total	125	287	112	22	21	18	32	122	739
Females									
Benefit Amount	1	2	2P	3	3P	4	5	Other	Total
<b>Under \$200</b>	1	-	-	-	-	-	6	-	7
\$200-\$399	1	1	1	-	-	-	16	-	19
\$400-\$599	6	3	-	-	1	-	14	1	25
\$600-\$799	3	1	1	-	-	-	11	-	16
\$800-\$999	6	2	1	-	2	2	8	-	21
\$1,000-\$1,499	10	4	3	-	-	1	23	-	41
\$1,500-\$1,999	11	7	5	2	3	1	12	2	43
\$2,000-\$2,499	17	15	6	-	1	1	9	-	49
\$2,500 & over	7	6	6	4	-	2	15	1	41
Total	62	39	23	6	7	7	114	4	262
Males & Females									
Benefit Amount	1	2	2P	3	3P	4	5	Other	Total
<b>Under \$200</b>	2	1	-	-	-	-	8	-	11
\$200-\$399	7	6	8	-	-	3	21	-	45
\$400-\$599	8	15	6	2	1	-	18	2	52
\$600-\$799	13	8	7	-	-	1	14	2	45
\$800-\$999	7	7	4	1	2	3	11	3	38
\$1,000-\$1,499	17	30	15	2	4	1	25	12	106
\$1,500-\$1,999	31	55	20	5	6	2	13	43	175
\$2,000-\$2,499	44	89	29	1	8	5	14	35	225
\$2,500 & over	58	115	46	17	7	10	22	29	304
Total	187	326	135	28	28	25	146	126	1,001



# Pensioners by Age and Option Code

Average Age Male = 61.5 Average Age Female = 61.2 Average Age Total = 61.4

Males				0	ption Co	de			
Age Last Birthday	1	2	2P	3	3P	4	5	Other	Total
Under 50	15	32	7	3	-	2	5	1	65
50-54	11	38	15	4	3	2	4	1	78
55-59	24	61	23	1	4	4	4	19	140
60-64	25	69	35	4	6	5	8	33	185
65-69	30	63	19	8	4	4	6	32	166
70-74	17	18	9	1	3	1	4	18	71
75-79	2	6	3	1	1	-	1	11	25
80-84	1	-	1	-	-	-	-	6	8
85 & over	-	-	-	-	-	-	-	1	1
Total	125	287	112	22	21	18	32	122	739
Females									
Age Last Birthday	1	2	2P	3	3P	4	5	Other	Total
Under 50	5	3	4	2	1	-	22	-	37
50-54	8	9	5	-	-	1	7	-	30
55-59	10	14	5	2	3	2	10	-	46
60-64	16	8	5	2	1	1	20	2	55
65-69	16	5	3	-	2	2	17	-	45
70-74	4	-	1	-	-	1	15	1	22
75-79	2	-	-	-	-	-	6	-	8
80-84	1	-	-	-	-	-	6	-	7
85 & over	-	-	-	-	-	-	11	1	12
Total	62	39	23	6	7	7	114	4	262
Males & Females									
Age Last Birthday	1	2	2P	3	3P	4	5	Other	Total
Under 50	20	35	11	5	1	2	27	1	102
50-54	19	47	20	4	3	3	11	1	108
55-59	34	75	28	3	7	6	14	19	186
60-64	41	77	40	6	7	6	28	35	240
65-69	46	68	22	8	6	6	23	32	211
70-74	21	18	10	1	3	2	19	19	93
75-79	4	6	3	1	1	-	7	11	33
80-84	2	-	1	-	-	-	6	6	15
85 & over	-	-	-	-	-	-	11	2	13
Total	187	326	135	28	28	25	146	126	1,001



# Pensions Awarded in 2014 by Option Code

Average Age = 61.4

Males & Females				(	Option Code	e			
Benefit Amount	1	2	2P	3	3P	4	5	Other	Total
<b>Under \$200</b>	-	-	-	-	-	-	1	-	1
\$200-\$399	-	2	-	-	-	-	1	-	3
\$400-\$599	1	2	-	1	-	-	3	-	7
\$600-\$799	-	-	-	-	-	-	-	-	0
\$800-\$999	3	-	-	-	1	-	1	-	5
\$1,000-\$1,499	3	3	3	1	-	-	3	-	13
\$1,500-\$1,999	3	6	2	-	-	-	1	-	12
\$2,000-\$2,499	7	7	3	-	2	-	2	-	21
\$2,500 & over	14	9	4	4	1	1	3	-	36
Total	31	29	12	6	4	1	15	0	98
Males & Females									
Age Last Birthday	1	2	2P	3	3P	4	5	Other	Total
Under 50	8	6	3	1	1	1	3	-	23
50-54	5	6	3	1	1	-	3	-	19
55-59	4	6	2	1	-	-	1	-	14
60-64	11	7	2	1	-	-	5	-	26
65-69	3	4	2	1	2	-	2	-	14
70-74	-	-	-	1	-	-	1	-	2
75-79	-	-	-	-	-	-	-	-	0
80-84	-	-	-	-	-	-	-	-	0
85 & over	-	-	-	-	-	-	-	-	0
Total	31	29	12	6	4	1	15	0	98

# Retirees and Disabled Members by Service at Retirement and Years Since Retirement

Average Service at Retirement = 16.3 Average Years Since Retirement = 7.8

Service at				Years	Elapsed Si	nce Retire	ment		
Retirement		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Totals
Less than 5	Count	10	9	54	36	18	12	12	151
	Avg. Benefit	\$3,585	\$3,859	\$3,856	\$2,293	\$2,058	\$1,717	\$973	\$1,907
5-9	Count	47	32	14	-	-	-	-	93
	Avg. Benefit	1,039	755	1,058	-	-	-	-	944
10-14	Count	53	30	17	-	-	1	-	101
	Avg. Benefit	1,730	1,617	1,388	-	-	1,233	-	1,634
15-19	Count	30	39	12	-	1	-	-	82
	Avg. Benefit	1,937	1,692	1,701	-	1,506	-	-	1,780
20-24	Count	129	120	55	4	1	-	-	309
	Avg. Benefit	2,578	2,160	2,094	1,910	1,890	-	-	2,319
25-29	Count	39	52	17	1	2	-	-	111
	Avg. Benefit	3,428	2,819	2,426	2,556	1,877	-	-	2,953
30-34	Count	21	17	2	-	1	-	-	41
	Avg. Benefit	3,936	3,529	3,150	-	3,030	-	-	3,707
35 & Over	Count	3	-	-	-	-	-	-	3
	Avg. Benefit	3,777	-	-	-	-	-	-	3,777
Totals	Count	332	299	171	41	23	13	12	891
	Avg. Benefit	\$2,323	\$2,052	\$1,965	\$2,262	\$2,054	\$1,680	\$973	\$2,126

# Retirees and Disabled Members by Year of Retirement

January 1, 2015 Total = 891

Year of Retirement	Count	Year of Retirement	Count
<b>Under 1960</b>	-	1987	4
1960	-	1988	2
1961	-	1989	4
1962	-	1990	4
1963	-	1991	4
1964	-	1992	2
1965	-	1993	8
1966	-	1994	4
1967	-	1995	12
1968	-	1996	9
1969	-	1997	5
1970	-	1998	12
1971	-	1999	4
1972	-	2000	9
1973	1	2001	11
1974	-	2002	31
1975	-	2003	38
1976	-	2004	78
1977	-	2005	61
1978	2	2006	53
1979	1	2007	76
1980	1	2008	60
1981	2	2009	48
1982	2	2010	61
1983	2	2011	75
1984	1	2012	53
1985	2	2013	65
1986	1	2014*	83

<sup>\*</sup>May include retirements as of January 1, 2015

# **Thirty Year Projected Benefit Payments**

Year Ending December 31	Actives	Retirees*	Total
2015	\$ 4,433,005	\$ 24,408,328	\$ 28,841,333
2016	6,956,693	24,301,578	31,258,271
2017	9,085,325	24,184,671	33,269,996
2018	11,202,171	24,045,596	35,247,767
2019	13,648,921	23,908,489	37,557,411
2020	16,150,222	23,769,583	39,919,806
2021	18,733,475	23,611,894	42,345,369
2022	21,396,146	23,421,179	44,817,325
2023	24,066,197	23,222,632	47,288,829
2024	26,797,459	23,020,525	49,817,984
2025	29,573,866	22,815,300	52,389,167
2026	32,394,505	22,566,761	54,961,266
2027	35,334,533	22,324,643	57,659,176
2028	38,515,882	22,091,891	60,607,773
2029	41,805,179	21,824,452	63,629,631
2030	45,184,605	21,571,286	66,755,891
2031	48,670,150	21,232,120	69,902,271
2032	52,178,837	20,889,287	73,068,124
2033	55,675,228	20,567,052	76,242,280
2034	59,143,657	20,181,424	79,325,081
2035	62,606,449	19,746,085	82,352,533
2036	65,801,079	19,266,813	85,067,892
2037	68,640,640	18,746,569	87,387,210
2038	71,123,726	18,255,553	89,379,279
2039	73,309,673	17,714,052	91,023,725
2040	75,150,459	17,118,598	92,269,057
2041	76,703,311	16,505,261	93,208,572
2042	77,950,647	15,927,431	93,878,079
2043	78,859,887	15,238,912	94,098,799
2044	79,528,155	14,515,664	94,043,818

<sup>\*</sup> Includes Disabled Members, Beneficiaries, and Deferred Vested Members. Retirement benefit payments for deferred vested members are assumed to commence at age 60.



# **APPENDIX A**

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

## **Summary of Actuarial Assumptions and Methods**

The following methods and assumptions were used in preparing the January 1, 2015 actuarial valuation report.

#### 1. Valuation Date

The valuation date for any given year is January 1<sup>st</sup>, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

#### 2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.75%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.

d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

### 3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

## 4. <u>Economic Assumptions</u>

#### a. <u>Investment return</u>

7.75% per year, compounded annually, composed of an assumed 3.25% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of investment expenses.

#### b. Salary increase rate

Age	Rate
20	8.00%
25	8.00%
30	6.75%
35	6.00%
40	5.50%
45	5.00%
50	5.00%
55	4.25%
60	4.25%

c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 4.25% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

#### 5. Demographic Assumptions

### a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 4 years with a multiplier of 104% Females: Set back 3 years with a multiplier of 90%

Healthy Post-Retirement Mortality:

RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: No set back with a multiplier of 104%

Females: Set forward 1 year with a multiplier of 90%

Disabled Mortality:

RP-2000 Disabled Mortality Table, fully generational, projected with Scale BB

Males: Set forward 5 years with a multiplier of 120% Females: Set forward 5 years with a multiplier of 120%

	Pre-Ret	irement	Post-Re	tirement	Disa	bled
		Proje	cted to 201	5 using Sca	le BB	
Age	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.03%	0.02%	2.59%	0.85%
25	0.04%	0.02%	0.04%	0.02%	2.59%	0.85%
30	0.04%	0.02%	0.04%	0.03%	2.59%	0.85%
35	0.05%	0.03%	0.08%	0.04%	2.59%	0.85%
40	0.08%	0.05%	0.11%	0.07%	2.59%	0.85%
45	0.11%	0.07%	0.15%	0.11%	3.32%	1.32%
50	0.16%	0.11%	0.21%	0.16%	4.07%	1.84%
55	0.24%	0.17%	0.36%	0.25%	4.54%	2.25%
60	0.42%	0.28%	0.63%	0.44%	5.02%	2.81%
65	0.71%	0.50%	1.11%	0.82%	5.99%	3.77%
70	1.23%	0.91%	1.84%	1.40%	7.85%	5.23%
75			3.14%	2.33%	10.46%	7.24%
80			5.34%	3.81%	13.55%	10.03%
85			9.18%	6.49%	18.64%	14.24%
90			16.16%	11.19%	29.33%	21.33%
95			25.42%	17.15%	39.52%	27.24%
100			34.25%	21.38%	47.75%	35.17%

65% of active deaths are assumed to be duty-related

### b. Disability and Withdrawal

	Disability		Withdrawal	
			Ultimate	
Age	Male	Female	Male	Female
20	0.07%	0.07%	10.00%	10.00%
25	0.07%	0.07%	10.00%	10.00%
30	0.07%	0.07%	7.50%	7.50%
35	0.08%	0.08%	6.50%	6.50%
40	0.18%	0.18%	6.00%	6.00%
45	0.38%	0.38%	5.00%	5.00%
50	0.67%	0.67%	3.00%	3.00%
55	1.14%	1.14%	3.00%	3.00%
60	2.22%	2.22%	3.00%	3.00%

Withdrawal						
	First five years					
Service	Male	Female				
1	25%	32%				
2	20%	22%				
3	13%	20%				
4	11%	15%				
5	11%	12%				

65% of active disabilities are assumed to be duty-related

### c. Retirement Rates

	Reduced	Unreduced		Reduced	Unreduced
Age	Rate	Rate	Age	Rate	Rate
50	7.5%	20.0%	58	7.5%	15.0%
51	6.0%	18.0%	59	15.0%	15.0%
52	6.0%	18.0%	60	NA	15.0%
53	8.5%	18.0%	61	NA	25.0%
54	9.0%	18.0%	62	NA	25.0%
55	12.0%	15.0%	63	NA	10.0%
56	8.5%	15.0%	64	NA	25.0%
57	8.5%	15.0%	65	NA	100.0%

10% is assumed for members with at least 20 years of service before age 50

## 6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: It is assumed that 45% of active members who terminate with a vested deferred benefit will elect to have their contributions refunded.

- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled.
- h. No children are assumed for purposes of valuing the ordinary death benefit.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 6.5% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- 1. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- n. Benefit Service: All members are assumed to accrue one year of service each year.



SUMMARY OF PLAN PROVISIONS

### **Summary of Plan Provisions**

**Covered Members** County sheriffs, deputy county sheriffs, municipal police officers;

Investigator of the Wyoming Livestock Board; meeting the specifications of W.S.7-2-101(a)(iv)(E), investigators employed by the Wyoming State Board of Outfitters and professional guides meeting the specifications of W.S. 7-2-101(a)(iv)(J); Correctional officers, probation and parole agents employed by the Wyoming Department of Corrections, Wyoming Law Enforcement Academy instructors, University of Wyoming campus police officers; And full-time dispatchers or detention officers for law enforcement

agencies.

**Final Average Salary** Employee's average annual salary for the highest paid five continuous years

of service.

**Service Retirement** 

Eligibility Age 60 with four or more years of service as a law enforcement officer or

any age with at least twenty years of service as a law enforcement officer. Early retirement benefits are payable to any law enforcement officer who has at least four but less than twenty years of service and are at least age 50. Early retirement benefits are actuarially reduced by 5% per year before age

60.

Monthly Benefit 2.50% of employee's highest five-year average salary for each year of

credited service, not to exceed 75.0% of final average salary.

Vesting Any employee who has left employment with four or more years of service,

and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of contributions with interest. An employee who terminates with less than four years of

service is only eligible for the lump-sum benefit.

**Duty Disability Retirement** 

Eligibility No age or service eligibility requirements. Partial or total disability

resulting from an individual and specific act, the type of which would normally occur only while employed as an employee, or as otherwise

defined under W.S. 9-3-432(h).

Monthly Benefit 62.5% of Final Salary.

**Non-duty Disability Retirement** 

Eligibility 10 years of credited service. Partial or total disability, but not eligible for

duty disability.

Monthly Benefit 50.0% of Final Salary.

#### **Pre-retirement Duty Death Benefit**

Eligibility No age or service requirements.

Monthly Benefit 62.5% of member's final actual salary, payable to the surviving spouse

plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed the member's final actual salary.

#### **Pre-retirement Non-duty Death Benefit**

Eligibility No age or service requirements.

Monthly Benefit 50% of the member's final actual salary payable to the surviving spouse

plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed 100% of the member's final actual

salary.

#### **Contributions**

Employee 8.6% of salary. The employer may subsidize all or part of the employee

contributions.

Employer 8.6% of salary.

Interest 5.5% annually.

Cost-of-Living Improvements W.S. 9-3-454 prohibits benefit changes, including cost-of-living

increases, unless the funded ratio stays above 100% plus a margin for

adverse experience throughout the life of the benefit change.



#### **Optional Forms of Payment**

Option 1 Monthly benefit for life with a lump-sum death benefit equal to the

excess (if any) of the employee contributions with interest over the total

benefits received.

Option 2 Monthly benefit for life. Upon death, 100% of the benefit continues to be

paid to the beneficiary.

Option 2P Monthly benefit for life. Upon death, 100% of the benefit continues to be

paid to the beneficiary. Benefit reverts to Option 1 amount but without

the cash refund feature upon beneficiary death.

Option 3 Monthly benefit for life. Upon death, 50% of the benefit continues to be

paid to the beneficiary.

Option 3P Monthly benefit for life. Upon death, 50% of the benefit continues to be

paid to the beneficiary. Benefit reverts to Option 1 amount but without

the cash refund feature upon beneficiary death.

Option 4 Monthly benefit for life with a guarantee of 120 monthly payments

Option 5 The largest possible monthly benefit payable for life with no lump-sum

death benefit.

Other Grandfathered group of retirees has an optional form which, upon death,

66.67% of the benefit continues to be paid to the beneficiary.